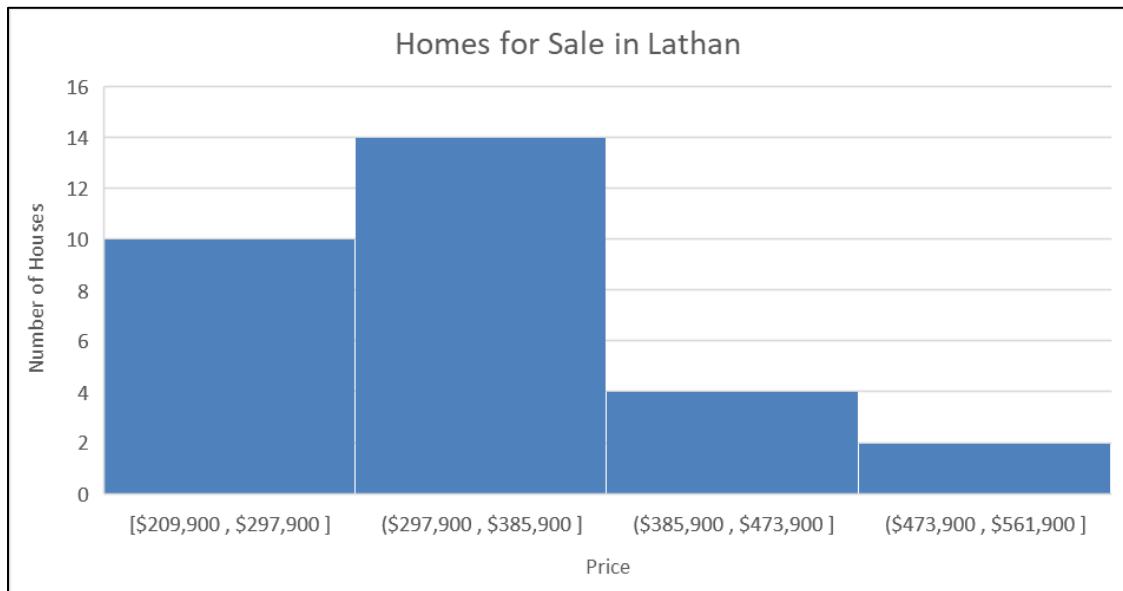


1. Create a histogram of price data using Inset Histogram on EXCEL. Label appropriately.



2. Describe the shape of the distribution and what the shape tells you about the prices.

The shape of the distribution is skewed to the right. This means that most houses have relatively lower prices while there are few which cost higher.

3. Use EXCEL to calculate the mean and median price.

Using EXCEL functions `average()` and `median()`, the mean price is \$337,197.00 while the median price is \$317,750.00.

4. Based on this distribution, is the mean or median a more appropriate measure of center for price? Explain.

Since the distribution is skewed, the median is the more appropriate measure of center for price. Unlike the mean, the median is more resistant to the effects of extreme values.

5. Calculate the 5-number summary and IQR (by hand).

Arrange the data in ascending order:

209900, 219000, 239900, 259000, 275000, 279699, 282900, 295100, 295500, 296950,
309500, 309900, 314360, 314360, 317750, 317750, 321900, 329744, 331900, 349900,
369900, 369900, 374900, 374900, 389900, 395342, 463055, 470000, 479000, 559000

Minimum

The minimum is the first observation in the arranged data set, so this is
\$209,900.

First Quartile

Since $n = 30$, the first quartile is the 8th observation in the arranged data set, so
this is \$295,100.

Median

Since $n = 30$, the median is the average of the 15th and 16th observations in the
arranged data set, so this is calculated as $\frac{317750+317750}{2} = 317750$. The median is
\$317,750.00.

Third Quartile

Since $n = 30$, the first quartile is the 23rd observation in the arranged data set, so
this is \$374,900.

Maximum

The maximum is the last observation in the arranged data set, so this is
\$559,000.

IQR

The IQR = Third Quartile - First Quartile = \$374,900 - \$295,100 = \$79,800.

In summary, the IQR is \$79,800 and the five-number summary is as follows:

Minimum	=	\$209,900
First Quartile	=	\$295,100
Median	=	\$317,750
Third Quartile	=	\$374,900
Maximum	=	\$559,000

6. Are there any outliers? Identify them using 1.5xIQR rule (by hand).

The lower and upper bound values that divide the outliers from those that are not outliers are:

$$\text{Lower bound} = Q1 - 1.5(IQR) = 295100 - 1.5(79800) = \$175,400.$$

$$\text{Upper bound} = Q3 + 1.5(IQR) = 374900 + 1.5(79800) = \$494,600.$$

None of the observations are below \$175,400. However, there is one observation that is above \$494,600 and this is the house that costs \$559,000. Hence, there is only one outlier and this is \$559,000.

7. Create a box plot for the price data using Insert Boxplot in EXCEL.

